

F-8945

IN THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1. (Original) An ink-accepting layer forming material to be applied in advance to an ink-accepting surface of an object that is to be colored with ink containing an anionic coloring material, said ink-accepting layer forming material comprising:

a weak acidic acrylic aqueous emulsion adhesive obtained by copolymerizing one or more ester (meth)acrylates having an alkyl group with 4-12 carbon atoms and a vinyl monomer;

a water-soluble cationic polymer; and

an aqueous medium, wherein

said acrylic aqueous emulsion adhesive has a viscosity of 4,000-20,000 mPa·s/30°C when it is in an emulsion state with about 50% solid content, and a dried film of said acrylic aqueous emulsion adhesive has a glass transition temperature within the range from -10 to -50°C,

2. (Original) An ink-accepting layer forming material according to claim 1, wherein said acrylic aqueous emulsion adhesive is obtained by copolymerizing one or more ester (meth)acrylates having an alkyl group with 4-12 carbon atoms and a vinyl monomer under presence of a nonionic surfactant.

3. (Original) An ink-accepting layer forming material according to claim 1, wherein said acrylic aqueous emulsion adhesive is obtained by copolymerizing one or

more ester (meth)acrylates having an alkyl group with 4-12 carbon atoms under presence of a nonionic surfactant and an anionic surfactant.

4. (Original) An ink-accepting layer forming material according to claim 1, 2, or 3, wherein a solid content of said acrylic aqueous emulsion adhesive is 0.5 to 5% by weight, a content of said water-soluble cationic polymer is 0.1 to 3% by weight, and the rest is an aqueous medium.

5. (Original) An ink-accepting layer forming material according to claim 1, 2, or 3, wherein said acrylic aqueous emulsion adhesive has an average molecular weight within the range from 3,000 to 20,000 and a weight-average molecular weight within the range from 10,000 to 100,000.

6. (Original) An ink-accepting layer forming material according to claim 1, 2, or 3, wherein said acrylic aqueous emulsion adhesive has a mean particle diameter within a range from 0.1 to 3 μm .

7. (Original) An ink-accepting layer forming material according to claim 1, 2, or 3, wherein a minimum forming temperature of a dried film of said acrylic aqueous emulsion adhesive is not more than 0°C.

8. (Original) An ink-accepting layer forming material according to claim 1, 2, or 3, wherein said acrylic aqueous emulsion adhesive is obtained by emulsion-copolymerization of 2-ethylhexyl acrylate, butyl acrylate, and vinyl acetate.

9. (Original) An ink-accepting layer forming material according to claim 8, wherein a content of said vinyl acetate in said acrylic aqueous emulsion adhesive is in the range from 20 to 30% by weight on the basis of a whole copolymer.

10. (Original) An ink-accepting layer forming material according to claim 1, wherein said water-soluble cationic polymer is a polymer of quaternary ammonium salts.

11. (Original) An ink-accepting layer forming material according to claim 1, wherein said water-soluble cationic polymer comprises a monoarylamine derivative represented by a general formula $\text{CH}_2 = \text{CH}-\text{CH}_2-\text{NHR}$ (wherein R represents an alkyl group with 1-18 carbon atoms, a substituted alkyl group, an aralkyl group, or a cycloalkyl group) or a polymer of salts thereof, or a copolymer of said monoarylamine derivative or a polymer of salts thereof and a monomer having an unsaturated double bond, which is copolymerizable with said derivative or said polymer.

12. (Original) An ink-accepting layer forming material according to claim 1 or 11, wherein said water-soluble cationic polymer is a polyarylamine hydrochloride having a weight-average molecular weight within a range from 1,000 to 5,000.

13. (Original) An ink-accepting layer forming material according to claim 1, 2, or 3, further comprising an aqueous emulsion of a weak acidic modified silicon resin having a nonionic or weak anionic particle charge.

14. (Currently amended) An ink-accepting layer forming material according to claim 1, 2, ~~3, or 13~~ or 3, further comprising an aqueous emulsion of a weak acidic fluorine resin having a nonionic or weak anionic particle charge.

15. (Currently amended) An ink-accepting layer forming material according to claim 1, 2, ~~3, 13, or 14~~ or 3, further comprising an aqueous emulsion of a weak acidic polylactic acid having a nonionic or weak anionic particle charge.

16. (Original) An ink-accepting layer forming material according to claim 1, 2, or 3, wherein said anionic coloring material has an anionic group.

17. (Original) An ink-accepting layer forming material according to claim 16, wherein said anionic coloring material is one selected from a group consisting of a pigment, a functional colorant, a direct dye, an acid dye, and reactive dye.

18. (Currently amended) An object that is to be colored obtained by applying an ink-accepting layer forming material according to any one of claims ~~1 to 15~~ 1, 2, 3, 10 or 11, on an ink-accepting surface of a base material to be colored with ink containing an anionic coloring material and drying a film of said ink-accepting layer forming material.

19. (Currently amended) A method of forming an ink-accepting layer forming material, wherein an ink-accepting layer forming material according to any one of claims ~~1 to 15~~ 1, 2, 3, 10, or 11, is applied to an ink-accepting surface of a base material to be colored with ink containing an anionic coloring material; and a step of applying said ink-accepting layer forming material to said ink-accepting surface of said base material to be colored to form a dried film of said ink-accepting layer forming material is repeated for a plurality of times.

20. (Currently amended) An object that is to be colored according to claim ~~18 or 19~~, wherein said base material to be colored is selected from a group consisting of a natural or synthetic resin; a natural, synthetic, or mixed fiber; cloth formed of a natural, synthetic, or mixed fiber; paper; wood; leather; synthetic leather; glass; a

shell; a stone; and a metal, which can be used alone or as a composite material of two or more.

21. (Currently amended) A coloring method, wherein ink containing an anionic coloring material is applied to an object that is to be colored according to claim 18, ~~19, or 20~~ by one method selected from a group consisting of dip dyeing, printing, ink-jet printing, laser printer printing, coating, and spraying.

22. (Original) A water-base ink comprising:

a weak acidic acrylic aqueous emulsion adhesive obtained by copolymerizing one or more ester (meth)acrylates having an alkyl group with 4-12 carbon atoms and a vinyl monomer;

a water-soluble cationic polymer;

an anionic coloring material; and

an aqueous medium, wherein

said acrylic aqueous emulsion adhesive has a viscosity of 4,000-20,000 mPa·s/30°C when it is an emulsion state with about 50% solid content, and a dried film of said acrylic aqueous emulsion adhesive has a glass transition temperature within the range from -10 to -50°C.

23. (Original) Water-base ink according to claim 22, wherein said acrylic aqueous emulsion adhesive is obtained by copolymerizing one or more ester (meth)acrylates having an alkyl group with 4-12 carbon atoms under presence of a nonionic surfactant.

24. (Original) Water-base ink according to claim 22, wherein said acrylic aqueous emulsion adhesive is obtained by copolymerizing one or more ester (meth)acrylates having an alkyl group with 4-12 carbon atoms under presence of a nonionic surfactant and an anionic surfactant.

25. (Original) Water-base ink according to claim 22, 23, or 24, wherein a solid content of said acrylic aqueous emulsion adhesive is 0.2 to 3% by weight, a content of said water-soluble cationic polymer is 0.1 to 3% by weight, a content of said anionic coloring material is 1 to 5% by weight, and the rest is an aqueous medium.

26. (Original) Water-base ink according to claim 22, 23, or 24, wherein said acrylic aqueous emulsion adhesive has an average molecular weight within a range from 3,000 to 20,000 and a weight-average molecular weight thereof within a range from 10,000 to 100,000.

27. (Original) Water-base ink according to claim 22, 23, or 24, wherein said acrylic aqueous emulsion adhesive has a mean particle diameter within a range from 0.1 to 3 μm .

28. (Original) Water-base ink according to claim 22, 23, or 24, wherein a minimum forming temperature of a dried film of said acrylic aqueous emulsion adhesive is not more than 0°C.

29. (Original) Water-base ink according to claim 22, 23, or 24, wherein said acrylic aqueous emulsion adhesive is obtained by emulsion copolymerization of 2-ethylhexyl acrylate, butyl acrylate, and vinyl acetate.

30. (Original) Water base ink according to claim 29, wherein a content of a vinyl acetate in said acrylic aqueous emulsion adhesive on the basis of a whole copolymer is 20 to 30% by weight.

31. (Original) Water-base ink according to claim 22, wherein said water-soluble cationic polymer is a polymer of quaternary ammonium salts.

32. (Original) Water-base ink according to claim 22, wherein said water-soluble cationic polymer comprises a monoarylamine derivative represented by a general formula $\text{CH}_2 = \text{CH}-\text{CH}_2-\text{NHR}$ (wherein R represents an alkyl group with 1-18 carbon atoms, a substituted alkyl group, an aralkyl group, or a cycloalkyl group) or a polymer of salts thereof, or a copolymer of said monoarylamine derivative or a polymer of salts thereof and a monomer having an unsaturated double bond, which is copolymerizable with said derivative or said polymer.

33. (Original) Water-base ink according to claim 22 or 32, wherein said water-soluble cationic polymer is a polyarylamine hydrochloride having a weight-average molecular weight within a range from 1,000 to 5,000.

34. (Original) Water-base ink according to claim 22, 23, or 24, further comprising an aqueous emulsion of a weak acidic modified silicone resin having a nonionic or weak anionic particle charge.

35. (Currently amended) Water-base ink according to claim 22, 23, ~~34, or 34 or 24~~, further comprising an aqueous emulsion of a weak acidic fluorine resin having a nonionic or weak anionic particle charge.

36. (Currently amended) Water-base ink according to claim 22, 23, or 24, ~~34, or 35~~, further comprising an aqueous emulsion of weak acidic polylactic acid having a nonionic or weak anionic particle charge.

37. (Original) Water-base ink according to claim 22, 23, or 24, wherein said anionic coloring material has an anionic group.

38. (Original) Water-base ink according to claim 37, wherein said anionic coloring material is at least one selected from a group consisting of a pigment, a functional colorant, a direct dye, an acid dye, and a reactive dye.

39. (Currently amended) An object that is to be colored by applying water-base ink according to any one of claims 22, 23 or 24 ~~to 28~~ to an ink-accepting surface of a base material to be colored.

40. (Original) An object to be colored according to claim 39, wherein said base material is selected from a group consisting of cloth formed of a natural fiber, cloth formed of a synthetic fiber, cloth formed of a mixed fiber, paper, wood, leather, synthetic leather, glass, a stone, a metal, and plastic.

41. (Currently amended) A coloring method, wherein water-base ink according to any one of claims 22, 23 or 24, ~~to 38~~ is applied to an ink-accepting surface of a base material to be colored by one method selected from a group consisting of dip dyeing, printing, ink-jet printing, laser printer printing, coating, and spraying.

42. (Original) A coloring method according to claim 41, wherein said base material to be colored is selected from a group consisting of a natural or synthetic resin; a natural, synthetic, or mixed fiber; cloth formed of a natural, synthetic, or

mixed fiber; paper; wood; leather; synthetic leather; glass; a shell; a stone; and a metal, which can be used alone or as a composite material of two or more.

43. (New) An ink-accepting layer forming material according to claim 13, further comprising an aqueous emulsion of a weak acidic fluorine resin having a nonionic or weak anionic particle charge.

44. (New) An ink-accepting layer forming material according to claim 13, further comprising an aqueous emulsion of a weak acidic polylactic acid having a nonionic or weak anionic particle charge.

45. (New) An ink-accepting layer forming material according to claim 14, further comprising an aqueous emulsion of a weak acidic polylactic acid having a nonionic or weak anionic particle charge.

46. (New) A coloring method, wherein ink containing an anionic coloring material is applied to an object that is to be colored according to claim 19, by one method selected from a group consisting of dip dyeing, printing, ink-jet printing, laser printer printing, coating, and spraying.

47. (New) A coloring method, wherein ink containing an anionic coloring material is applied to an object that is to be colored according to claim 20, by one method selected from a group consisting of dip dyeing, printing, ink-jet printing, laser printer printing, coating, and spraying.

48. (New) Water-base ink according to claim 34, further comprising an aqueous emulsion of a weak acidic fluorine resin having a nonionic or weak anionic particle charge.

49. (New) Water-base ink according to claim 34, further comprising an aqueous emulsion of weak acidic polylactic acid having a nonionic or weak anionic particle charge.

50. (New) Water-base ink according to claim 35, further comprising an aqueous emulsion of weak acidic polylactic acid having a nonionic or weak anionic particle charge.

51. (New) An object that is to be colored according to claim 19, wherein said base material to be colored is selected from a group consisting of a natural or synthetic resin; a natural, synthetic, or mixed fiber; cloth formed of a natural, synthetic, or mixed fiber; paper; wood; leather; synthetic leather; glass; a shell; a stone; and a metal, which can be used alone or as a composite material of two or more.